

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Drewniok
Serial No.: 09/740,134
Filed: 12/18/2000
Group Art Unit: 3729
Examiner: R. Chang
Title: METHOD AND DEVICE FOR FOAMED IN PLACE ELECTRICAL SYSTEMS

Box AF
Commissioner of Patents & Trademarks
Washington, D.C. 20231

Dear Sir:

APPEAL BRIEF

This Appeal Brief is being filed in response to a Notice of Appeal that was resubmitted on October 9, 2003 via facsimile (see attached). The Notice of Appeal had originally been sent by certified mail under §1.8 on July 30, 2003. At the time of the resubmission, the Notice of Appeal had not been entered into PAIR. On October 14, a secretary employed by Carlson, Gaskey & Olds, Laura Combs, was still communicating with the USPTO through Gail at 703-308-0991 to get the Notice of Appeal entered.

Under MPEP 1206, the Appeal Brief is due two months from the date the Notice of Appeal is received by the USPTO. Here, that did not occur until at least October 9, 2003 as the originally mailed Notice was apparently never received as evidenced by its absence from PAIR still two and a half months after its mailing. According to PAIR, the date of the Notice is now reflected as July 30, 2003. The date cannot be July 30 because that is the date upon which the Appellant mailed the Notice, and it does not correspond to the date upon which the Notice was received by the USPTO. Appellant contends that the date should be reset to October 9, 2003 or later, making this Appeal Brief timely filed within the two month period. Appellant could not

simply have filed its Appeal Brief since it would have been considered non-responsive without a previously received Notice.

Appellant cannot be penalized for the failure for the USPTO to timely receive and process Appellant's Notice. Moreover, under the Rules, the time set for response is improper and must be reset. No additional fees should be due, however, if any further fees are due, please charge 50-1482 in the name of Carlson, Gaskey & Olds.

REAL PARTY IN INTEREST

The real party in interest Meritor Automotive GmbH of Frankfurt, Germany. Meritor Automotive GmbH is the Assignee of all right and title in this Application from the inventors, as indicated in the assignment recorded on December 18, 2000 at reel/frame 011388/0340.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Claims 13-15, 18-21, 23-25, and 27 are presently pending in the application. Claims 13-15, 20-21, 23-24, and 27 stand finally rejected under §103(a). The rejection of claims 1, 4, 6-14, 16-18, and 20 is being appealed.

The Examiner indicated that claims 18, 19, and 25 are withdrawn from consideration as a result of the Examiner's second restriction. The Examiner withdrew claim 25 because it is drawn to Figure 6. However, Appellant elected prosecution of the species reading upon Figure 6 in the Appellant's March 3, 2003 Revised Election.

STATUS OF AMENDMENTS

An Amendment After Final was mailed on July 2, 2003 amending claim 21 to correct an antecedent basis issue with that claim, which must be corrected prior to appeal. In response to the Examiner's numerous reminders throughout the Final Office Action mailed May 2, 2003, Appellant amended the Specification to provide reference numerals for clarity. None of the amendments introduced new matter.

The Advisory Action mailed July 22, 2003 did not even acknowledge the Amendment After Final, although PAIR indicates its entry. Accordingly, the status of the Amendment is unknown. The amendment should be entered in its entirety since it simplifies the issues on appeal.

SUMMARY OF THE INVENTION

Referring to page 1 of the application, this invention relates to foam line systems in place in components, such as the door modules for motor vehicles. Plug-in connection elements are required in order to allow later connection of the loads concerned. These are preferably likewise foamed in place in such a way that only the opening in this connection element into which the corresponding part concerned is later inserted remains freely accessible. During foaming in place there is then the risk of the initially very liquid foam being easily able to penetrate through the opening in the body of the plug-in connection element, for leading through the leads, into the body and consequently rendering the entire arrangement unusable.

The problem which consequently arises according to the invention is solved by the entry point of the electrical conductor into the plug-in connection element being sealed by a closure part under the pressure of the foam to be introduced. This closure part may have two

flexible lips, which lie against each other and enclose the electrical lead, or comprise a component which corresponds to the outwardly widening opening for the insertion of the leads. Both solutions are explained in more detail with references to the attached drawing.

Figure 1 shows a first embodiment of the invention, with a plug-in connection element (1) in cross section, the design of which may be formed as desired according to the intended use and which is foamed in place in the foam (2). This plug-in connection element has on the one hand contacts (14) (only indicated) for the later connection of a load and on the other hand the connection to a lead (3), which may comprise a single line or a plurality of single electrical lines of a known type (round-conductor ribbon, flat-conductor ribbon, webbed ribbon conductor or the like). This lead (3) is led through the closure part (4), which has two flexible lips which lie against each other and enclose the lead (3). The closure part (4) may be fitted onto the body of the plug-in connection element (see Figure 20, moulded onto the body or connected to it in another suitable way, or if the body is of a suitable material may be produced integrally with it.

The design of the lips lying against each other depends on the type of leads (3) to be led through. Figure 3 shows an embodiment in plan view, in which the lead (3) is a webbed ribbon conductor. In this case, the lip parts (5a, 5b), which meet along the line (6), have cutouts (7) adapted to the cross section of the individual wire of the webbed ribbon conductor.

If a plug-in connection element with a closure part (4) designed in such a way is foamed in place in a component, such as a car door for example, the expanding foam presses the flexible lips (5a, 5b) against each other and in the direction of the body of the plug-in connection element (1) and brings about a sealed termination, which prevents foam from penetrating into this body.

Figure 4 shows another design, for the case in which the lead (3) comprises a flat

conductor. Then, the lips have to leave only a narrow gap (8), the insertion of the flat conductor then preferably being made easier by one side of the closure part (4) having a cut opening (9).

The pressure applied by the foam can be intensified by providing surface-area enlargements on the lips, in the form of lugs or additional ridges (10), as Figure 5 shows by way of example.

Another embodiment of the solution according to the invention is represented in Figure 6, in which the opening (15) of the plug-in connection element (1) through which the lead (3) is inserted is widened outwards in cross section in a funnel-shaped manner and the closure part (11), consisting of a flexible material, has a corresponding, tapering form, as Figure 6 in particular clearly shows. Depending on the type of lead (4) to be inserted, this closure part (11) may adopt a wide variety of forms. For example, in the case of a single line, the closure part may have a conical shape, while for a flat conductor ribbon an elongated design that is rectangular in cross section perpendicularly with respect to the direction of the line, with tapering side and end faces, can be used. The opening (15) in the plug-in connection element, widening in a funnel-shaped manner, is then correspondingly designed.

The sealing effect can be intensified by providing the closure part with a sealing collar (12), which can come to bear in a sealed manner on the end face of the plug-in connection element. The sealing between the closure part (11) and the lead (3) can be improved if peripheral cam strips (13) are provided on the closure part. This achieves the effect that the flexible closure part (11) is deformed in the direction of the lead when, during foaming in place, the closure part is pressed into the opening (15) in the plug-in connection element by the pressure of the foam.

A wide variety of materials can be used for the closure part according to both

embodiments described above and all modifications that are obvious to a person skilled in the art, provided that they are adequately flexible or can be deformed under the pressure of the expanding foam.

Accordingly, the present invention relates to a method of sealing plug-in connection elements of electrical line systems during the foaming in place of such elements that are to be foamed in place in components, in which method the entry point of the electrical lead in to the plug-in connection element is sealed by a closure part under the pressure of the foam to be introduced. The closure part preferably includes and elastically deformable material and has either lips which lie against each other and enclose the lead or a form corresponding to the opening in the plug-in connection element that widens outwards for receiving the lead.

ISSUES

Is the rejection of all of the claims proper given the Examiner's motivation to combine Hagel and McCooey?

GROUPING OF CLAIMS

The term "contested" means that Appellant is appealing the rejection provided by the Examiner to the particular claim or claims. The claims are grouped together by letter, and the claims within a particular group stand or fall together. However, the claims of one group do not stand or fall with the claims of another group.

All of the claims stand and fall together.

ARGUMENTS

Combining Hagel and McCooey is Improper.

All of the pending claims were rejected under §103 as being obvious over Hagel in view of McCooey. The examiner states that the base reference, Hagel, fails to disclose providing the foam pressure recited in all of the claims. That is, Hagel fails to meet the limitations of steps c) and d) in claim 13. Specifically, Hagel does not disclose forcing the elastically deformable closure part into the opening of the plug-in connection element under the pressure of foam and sealing the elastically deformable closure part in the opening of the plug-in connection element under the pressure of foam.

The examiner argues that the missing element is disclosed by McCooey and that the motivation to one of ordinary skill in the art to modify Hagel with McCooey would be for the purpose of sealing to protect from the environment.

The combination of Hagel and McCooey is improper for three reasons. First, the threaded engagement of the shell 1 and cap 3 provide the pressure in Hagel. In the Advisory Action, the Examiner expressed confusion as to what the Appellant was referring. The shell and cap are terms used in Hagel. There is no benefit in Hagel to provide foam pressure since the pressure is already provided by the shell and cap. Specifically, the closure part is forced into the opening as the cap is threaded onto the shell. As a result, one of ordinary skill in the art would not modify Hagel. The Examiner is merely picking and choosing elements because the wires in Hagel are already sealed and protected from the environment so there is no reason to modify Hagel.

Second, there is no teaching in the references as to where one would put the foam in Hagel. Hagel teaches a self-contained connector. There is no location to place the foam, and the foam cannot replace the cap and shell because there is no surrounding structure taught against which the foam may act to exert the pressure.

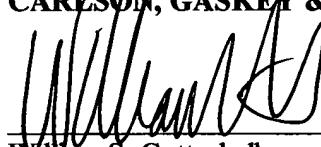
Third, McCooey's teachings is directed to eliminating a soft spot in the region of an

the IP forming process. Significantly, there are no wires or wire connectors discussed or taught in McCooey. What, then, is the teaching that would motivate one of ordinary skill in the art to combine McCooey with Hagel?. The examiner's stated motivation of "sealing to protect from the environment" is not taught by McCooey as argued, and even if it was, the teachings of McCooey are not even remotely related to the teachings of Hagel. The Appellant is not arguing that the references are nonanalogous, but rather, taking the teachings as a whole there is no motivation to one of ordinary skill in the art to modify the base reference, Hagel.

CLOSING

For the reasons set forth above, the final rejection of all claims is improper and must be reversed. An early indication of such is earnestly solicited.

Respectfully submitted,
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